

## Improved cognitive, affective and anxiety measures in patients with chronic systemic disorders following structured physical activity

Teixeira R., Marins J., De Sá Junior A., De Carvalho C., Da Silva Moura T., Lade C., Rizvanov A., Kiyasov A., Mukhamedyarov M., Zefirov A., Palotás A., Lima L.

*Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia*

---

### Abstract

© 2015 The Author(s). Mental illnesses are frequent co-morbid conditions in chronic systemic diseases. High incidences of depression, anxiety and cognitive impairment complicate cardiovascular and metabolic disorders such as hypertension and diabetes mellitus. Lifestyle changes including regular exercise have been advocated to reduce blood pressure and improve glycaemic control. The purpose of this project was to evaluate the effect of physical training on the most prevalent corollary psychiatric problems in patients with chronic organic ailments. This longitudinal study assessed the mental health of hypertensive (age:  $57 \pm 8$  years) and/or diabetic (age:  $53 \pm 8$  years) patients using mini-mental state examination, Beck's depression inventory, Beck's anxiety inventory and self-reporting questionnaire-20 before and after a 3-month supervised resistance and aerobic exercise programme comprising structured physical activity three times a week. Clinically relevant improvement was observed in the Beck's depression inventory and Beck's anxiety inventory scores following the 12-week training (61%,  $p = 0.001$ , and 53%,  $p = 0.02$ , respectively). Even though statistically not significant ( $p = 0.398$ ), the cognitive performance of this relatively young patient population also benefited from the programme. These results demonstrate positive effects of active lifestyle on non-psychotic mental disorders in patients with chronic systemic diseases, recommending exercise as an alternative treatment option.

<http://dx.doi.org/10.1177/1479164115602651>

---

### Keywords

Anxiety, chronic disease, cognitive dysfunction, depression, diabetes mellitus, hypertension, mental health, physical exercise